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CLAIMS

1. – Deviation system for guide means used in a set of toy vehicles, being said set of the type that consists of a trajectory determined by guide means (2) and at least a vehicle provided with an adapted guide follower (4) to said guide means (2) to follow said trajectory **characterized** in that it comprises:

- at least one branching fork (7) in said guide means (2) from which start first and second branches (2a, 2b);
- a mounted switch point (9) in said branching fork (7) so that it can move between a first position, in which said guide follower (4) of the vehicle is forced to follow by said first branch (4a), and a second position, in which the guide follower (4) is forced to follow by the second branch (2b);
- an arm (11) together with said switch point (9) and provided with a contact end (22) located downstream of said switch point (9),

being said contact end (22) capable of being pushed when the vehicle passes by a movable member (12) associated to the vehicle before the guide follower (4) reaches the switch point (9) to change the switch point (9) from said first position to said second position, or vice versa, being incorporated a control system to drive remotely said movable member (12) of the vehicle.

2. - System, in agreement with the claim 1, characterized in that said guide means consist of a guide channel (2) branched off in first and second branches (2a, 2b) in a track surface (1a) for the vehicle and electroconducting tracks (6a, 6b) connected to an electrical power supply adjacent to side and side of said guide channel (2) and of said first and second branches (2a, 2b), consisting said vehicle an electrical motor ready to drive one or more driving wheels, and a set of guide and dynamic current collector provided with said guide follower in fin-shape (4) adapted to slide by the interior of the mentioned guide channel (2) and brushes (32) connected to said motor and ready to take feeding electrical current from said electroconducting tracks (6a, 6b) at the same time that the vehicle moves.

3. - System, in agreement with claim 2, characterized in that said switch point (9) is arranged inside the guide channel (4) in the zone of the branching fork (7) and articulated in such a way that can pivot between said first and second positions in respect to an axis (15) normal to said track surface (1a) located at the

current end down the switch point (9), being arranged elastic means (10) that push said switch point (9) towards mentioned first position.

4. - System, in agreement with claim 3, characterized in that the arm (11) is located below the switch point (9) and the contact end (22) is in the trajectory of the guide channel (2) at a lower level than the level reached by said fin (4) of the set of guide and the dynamic current collector (3) of the vehicle, and because said movable member of the vehicle is a retractable member (12) linked to activation means (17, 26) mounted on the vehicle, which are a part of said control system, in order to move said retractable member (12) between:

a retracted position, in which the retractable member (12) does not project lowerly from the vehicle to reach the contact end (22) of the arm (11), with which, when the vehicle moves through the branching fork (7), the switch point (9) remains in its first position; and

an extended position, in which the retractable member (12) projects lowerly from the vehicle to reach the contact end (22) of the arm (11), with which, when the vehicle moves through the branching fork (7), the switch point (9) is forced to its second position.

5. - System, in agreement with claim 4, characterized in that the control system consists of, in addition, transmitter means to transmit a specific signal of drive of said activation means (17, 26) and receiver means associated to the vehicle to receive said signal.

6. - System, in agreement with claim 5, characterized in that the electroconducting tracks (6a, 6b) are fed under a predetermined constant tension and said transmitter means and signal receivers of the control system use for each vehicle multiplexing digital signals transmitted through a same channel including an authentication code of the vehicle, a speed regulator command and a drive command of the actuation means (17, 26).

7. - System, in agreement with claim 6, characterized in that said signals are transmitted through said electroconducting tracks (6a, 6b).

8. - System, in agreement with claim 7, characterized in that said transmitter means are arranged in an associated control to a vehicle controlled by a user.

9. - System, in agreement with claim 5, characterized in that said retractable member (12) is associated to the mentioned set of guide and the dynamic current collector (3) of the vehicle.

10. - System, in agreement with claim 9, characterized in that the retractable member (12) is mounted of sliding track in a passage (21) that crosses the fin (4) so that, in its retracted position, it is hidden in said passage (21) and, in its extended position, projects lowerly of the fin (4).

11. - System, in agreement with claim 10, characterized in that said passage (21) is coaxial with a pivoting rod (19) of the set of guide and the dynamic current collector (3) of the vehicle (3) so that it can turn in a hole of a lower part (40) of the vehicle, and the retractable member (12) comprises an upper end (20) that projects by the upper part of said rod (19), being the retractable member (12) pushed towards its retracted position by an elastic element, which is a part of said activation means (26), as a charged spiral spring (26) housed in a widened portion (25) of the passage (21), inserted around part of the retractable member (12) and retained in compression by a top (27) fixed to the retractable member (12), being another part of the activation means (17) ready to move the retractable member (12) towards its extended position against the force of said elastic element (26).

12. - System, in agreement with the claim 11, characterized in that said other part of the actuation means (17) consists of an actuator, as a solenoid of the actuation means, to drive a lever (13), an end of which is located on said upper end (20) of the retractable member (12) being said end of the lever (13) capable of pressing against said upper end (20) of the retractable member (12) to move it when said actuator (18) is driven.

13. - System, in agreement with claim 5, characterized in that said contact end (22) of the arm (11) consists of a cam profile (14) with a suitable inclination so that the switch point (9) is moved to its second position by the contact of the retractable member (12) of the vehicle, in its extended position, with said cam profile (14), extending said cam profile (14) in a guide profile (16) placed all along the arm (11) to maintain the switch point (9) in its second position during the pass of the vehicle by said branching fork (7) by the contact of the retractable member (12), in its extended position, with said guide profile (16).

14. - System, in agreement with claim 13, characterized in that the arm (11) and the switch point (9) are an integral part of a same body (38) which includes in addition a lever arm (28) that starts laterally from a zone next to the axis (15) and whose end is applied said elastic means (10), being said lever arm (28) located in a lower face of said track surface (1a).

15. - System, in agreement with claim 14, characterized in that said elastic means consist of a draft spiral spring (10), with an end fixed to a projection (29) placed in said lower face of the track surface (1a) and another end fixed to said lever arm (28).

16. - System, in agreement with claim 11, characterized in that said set of guide and dynamic current collector (3) of the vehicle consists of brush holder platforms (31) that project to side and side of the same one, between the rod (19) and the fin (4), in a position substantially parallel to the upper surfaces of contact of the electroconducting tracks (6a, 6b), being placed in each one of said brush holder platforms (31) means for electrically holding and connecting a respective brush (32).

17. - System, in agreement with claim 5, characterized in that those of said electroconducting tracks (6a, 6b) located in the opposed sides of the guide groove (2) are connected to opposed polarities of a DC source and have continuity in the electroconducting tracks (6a, 6b) located in the most remote sides of the branches (2a, 2b), whereas respective sections of electroconducting tracks (6a, 6b) start to each other without contact in the proximities of the branching fork (7) and extend downstream in the closest sides of the branches (2a, 2b) and are connected to opposed polarities of said DC source, reason why there is interruptions (8) in the electroconducting tracks (6a, 6b) in the zone of the branching fork (7).

18. - System, in agreement with claim 17, characterized in that said switch point (9) includes electroconducting elements (9a, 9b) connected to opposed polarities of said DC source slightly projecting from its lateral faces and the fin (4) of the set of guide and dynamic current collector (3) consists of electrical contacts (4a, 4b) arranged in their flanks and connected electrically to the motor to take feeding electrical current from at least one from said electroconducting elements (9a, 9b) in a zone of the branching fork (7) where at least one of the brushes (32) cannot make contact with its respective electroconducting track (6a, 6b) as a consequence to said interruptions (8).

19. - System, in agreement with claim 18, characterized in that at least one of the electroconducting elements (9a) is retractable and is pushed towards its more projecting position by elastic means (5).

20. - System, in agreement with claim 19, characterized in that said retractable electroconducting element (9a) is only one and is arranged in the side

of the switch point (9) corresponding to opposed side to the side towards which is pushed by the elastic means (10) connected to the lever arm (28), being fixed the other electroconducting element (9b) and being arranged in the opposite side.

21. - System, in agreement with claim 20, characterized in that the electroconducting elements (9a) are made of a laminar material and present as a contact zone a rim or an edge of a portion of said laminar material no parallel to the flank of the switch point (9), and the retractable electroconducting element (9a) has a bent portion (23) inserted in a gap (30) of the switch point (9) in which are said elastic means (5) in the form of elastic tongue-pieces (5) integrals of the switch point (9), being both electroconducting elements (9a) retained and covered by a cover (39) made of dielectric material.

22. - System, in agreement with claim 14, characterized in that it consists of a portion of track (1) that includes the track surface (1a) in which are arranged a first and a second guide channels (80, 90), comprising the first guide channel (80) one of said branching forks (87) of which start a first branch (82a), that it is prolongation of the corresponding first guide channel (80), and a second branch (82b) that comes together downstream with said second guide channel (90) in a confluence (93), being placed respective electroconducting tracks (75a, 75b) adjacent to side and side of the first and second guide channels (80, 90) and said first and second branches (82a, 82b), existing interruptions (88, 98) in said electroconducting tracks (75a, 75b) in the branching fork (87), the confluence (93) and zones next to the same ones, and being arranged a body (38) with a switch point (9) and an arm (11) in the branching fork (87).

23. - System, in agreement with claim 14, characterized in that it consists of a portion of track (1) that includes the track surface (1a) in which are placed a first and a second guide channels (50, 60), comprising each one of them one of said branching forks (57, 67) of which start first branches (52a, 62a), that are a prolongation of the corresponding first and second guide channels (50, 60), and second branches (52b, 62b), where the second branch (52b) of the first guide channel (50) comes together downstream with the first branch (62a) of the second guide channel (60) in a confluence (63) and the second branch (62b) of the second guide channel (60) comes together downstream with the first branch (52a) of the first guide channel (60) in a confluence (53), taking place a crossing of the second branches (52b, 62b) in a crossing (51), being placed the respective electroconducting tracks (70a, 70b) to side and side of the first and second guide

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channels (50, 60) and each one of said first and second branches (52a , 62a; 52b, 62b); existing interruptions (58, 59, 68) in said electroconducting tracks (70a, 70b) in the branching forks (57, 67), confluences (53, 63), crossings (51) and zones next to them, being placed a body (38) with a switch point (9) and an arm (11) in each one the branching forks (57, 67).

24. - System, in agreement with claim 20, characterized in that it consists of a portion of track (1) that includes the track surface (1a) in which are placed a first and a second channels guide (80, 90), comprising the first guide channel (80) one of said branching forks (87) from which start a first branch (82a), which is prolongation of the corresponding first guide channel (80), and a second branch (82b) which comes together downstream with said second guide channel (90) in a confluence (93), being arranged respective electroconducting tracks (75a, 75b) adjacent to side and side of the first and second guide channels (80, 90) and of said first and second branches (82a, 82b), existing interruptions (88, 98) in said electroconducting tracks (75a, 75b) respectively in the branching fork (87) and the confluence (93), and/or in zones next to the same ones, being arranged a body (38) that includes an arm (11) and one switch point (9) provided with electroconducting elements (9a, 9b) as much in the branching fork (87) as in the confluence (93).

25. - System, in agreement with claim 20, characterized because it consists of a portion of track (1) that includes the track surface (1a) in which are placed a first and a second channels guide (50, 60), comprising each one of them of said branching forks (57, 67) from which starts first branches (52a, 62a), that are prolongation of the corresponding first and second guide channels (50, 60), and second branches (52b, 62b), where the second branch (52b) of the first guide channel (50) comes together downstream with the first branch (62a) of the second guide channel (60) in a confluence (63) and the second branch (62b) of the second guide channel (60) comes together downstream with the first branch (52a) of the first guide channel (60) in a confluence (53), taking place a crossing of the second branches (52b, 62b) in a crossing (51), being placed respective electroconducting tracks (70a, 70b) to side and side of the first and second guide channels (50, 60) and to each one of said to first and second branches (52a, 62a; 52b, 62b); existing interruptions (58, 59, 68) in said electroconducting tracks (70a, 70b) respectively in the branching forks (57, 67), confluences (53, 63) and crossing (51), and/or and/or in zones next to the same ones, being arranged a

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body (38) that includes an arm (11) and one switch point (9) provided with electroconducting elements (9a, 9b) as much in each one of the branching fork (57,67) as in each one of the confluences (53,63).